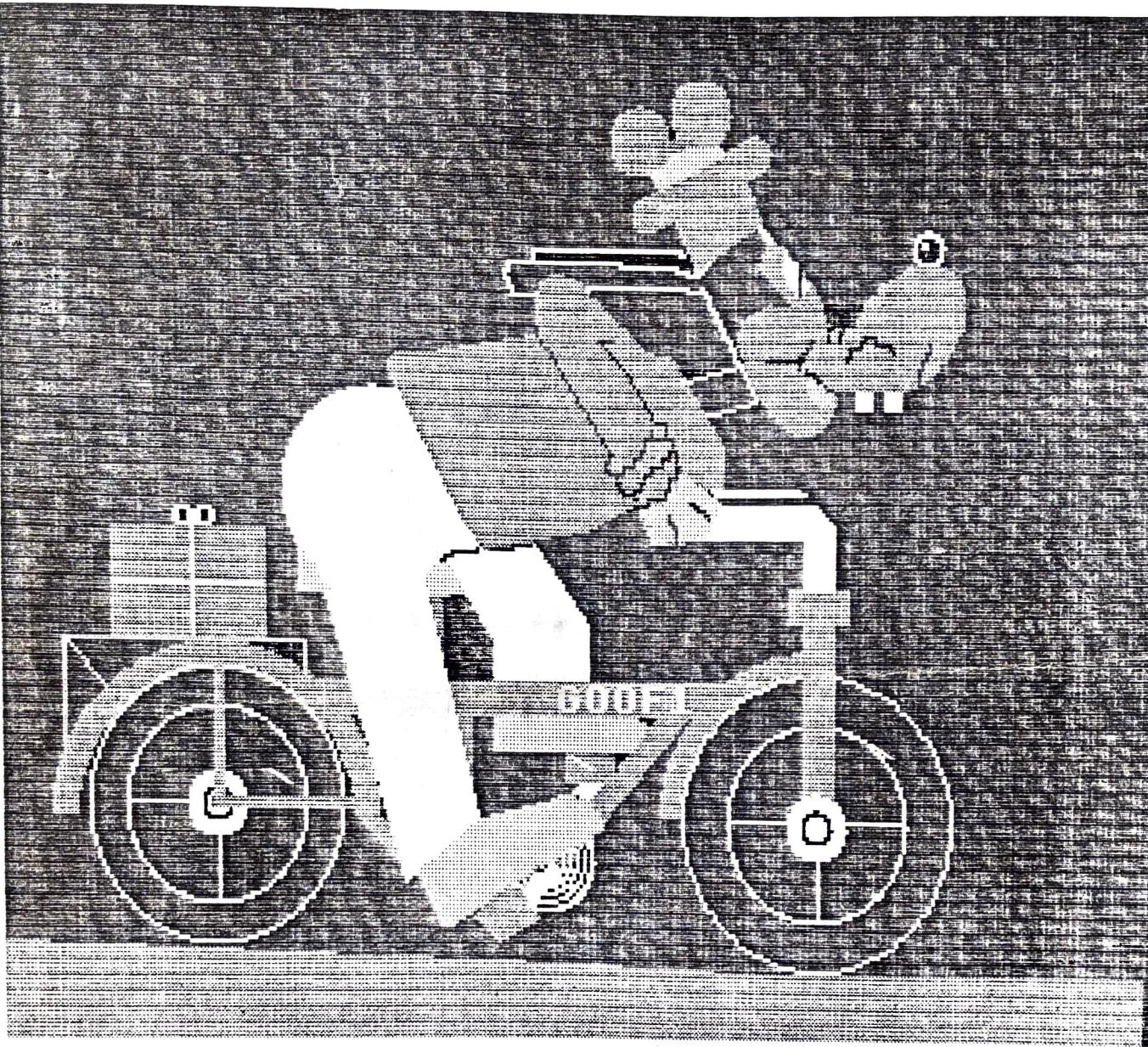




MM MM AAAA RRRR	CCCC HH HH	11 9999 8888 44
MM MM AA AA RR RR	CC CC HH HH	111 99 99 88 88 444
MMMMMM AA AA RR RR	CC HH HH	11 99 99 88 88 4444
MM M MM AAAAAA RRRR	CC HHHHHH	11 99999 8888 44 44
MM M MM AA AA RR RR	CC HH HH	11 99 88 88 444444
MM MM AA AA RR RR	CC CC HH HH	11 99 88 88 44
MM MM AA AA RR RR	CCCC HH HH	111111 999 8888 44



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Diary

April 4th	(Farfields)	Social
April 18th	(Park Baths)	Guest speaker
May 2nd	(Farfields)	Social
May 16th	(Park Baths)	Annual General Meeting & Buggy demonstration by Econometrics

We would like to thank Paul Leman for his talk and demonstration at the February meeting. This is the second interesting talk on graphics that Paul has given and he has promised to keep us informed of any further developments at the University Micro Centre.

There has recently been a great deal of publicity given to software piracy, including an allegation on BBC2's 'Newsnight' that the local computer clubs are 'dens of pirates'. This is perhaps the right time to remind people of the current copyright situation. All commercial software is covered by copyright, and unauthorised copying of any such programs and associated materials may be illegal. This user group exists to promote a genuine interest in microcomputing and in no way condones abuse of copyrighted material.

Any breach of copyright is considered a personal action and is the individual's responsibility.

This month's front page design has been produced on the Beeb by Chris Bramwell, and we stress that there is no significance in the choice of subject. It is just a good cartoon character! How about some front page designs from other members?

Solidisc RAM Boards

The bulk order of boards finally arrived, the delivery period of 7-10 days turned out to be calculated in 'Acorn Time' i.e. 4 weeks. Installation is slightly more involved than is apparent from the publicity, but nobody seems to have had any insurmountable problems. The quality of the boards seems to be variable, like so many of the current popular accessories, and most problems have been due to poor quality of the soldering on the mounting socket. The fitting instructions are barely adequate and the 'manual' consists solely of the fact sheets printed in our January newsletter. However, the accompanying software includes well written utilities for use with the RAM boards, and once fitted the board fulfills all the claims made of it.

Several other members are now thinking of buying these boards and we suggest that they get together and send another collective order. The discount given for the original order of 13 was 15%, and there is no reason why a similar discount should not be obtained.

Second Processors

One of the major advantages of the Beeb which was much vaunted in the early days is the ability to add a second processor. Originally Acorn had intended to have two or three versions available so that in effect the Beeb could never become obsolete in the way that the first generation of micros has done. Two years on these have become a stale joke in computer circles but over the next few months they seem likely to become a reality. By this time there are several competitors around and with the Sinclair QL a threat (long distance?) in the background, this enhancement of the Beeb is likely to become important to its long term survival, particularly for more serious applications.

The advantage of the second processor is that the various tasks of the computer are split up in such a way that the original machine handles all the peripherals such as the screen, keyboard and printer, while the second processor executes the program. Since the program is no longer subject to interrupts generated by the clock, a/d converter etc., the program will run substantially faster and there is the added advantage of being able to address considerably more memory. Thus as new microprocessors become available it will only be necessary to add them as a relatively cheap add-on board rather than buy a complete new computer.

The first in the field was the Torch system which consists of a twin disc drive and a Z80 second processor together an impressive package of software for around £800. Despite some early teething problems this has been a steady seller among people who need access to CP/M software. During the last few months another Z80 board has been released without the disc drives but again CP/M compatible for around £400. There is also a 6809 board available from Cambridge Microprocessor Systems for anyone interested in developing 6809 software.

The two boards to be released shortly by Acorn are based on the 6502 and Z80 microprocessors. The Z80 board again comes with a comprehensive software package and BITSTIK (a sophisticated CAD program) is being marketed in association with the 6502 board. Far more exciting however is Acorn's plan to release a board based on the 16032 chip which is the first one to be based on a true 16-bit microprocessor. This seems to be the important development for the average user. Unless you specifically need the CP/M facility (which is also available on the Kenda DFS), the extra memory is obtainable more cheaply from the many add-on RAM boards which are now becoming available and the speed increase is not sufficiently drastic to be of importance for most applications. Another possibly cheaper route to a 16-bit machine is via a chip which has just been announced by Western Design Centre Inc. which claims to be a pin-compatible 16-bit 6502.

For these reasons it seems that if the Acorn processors are going to sell after all the delays, it will be on the basis of the 'free' accompanying software rather than the hardware.

Wordwise Tips

This month's ideas appear in the current Beebug magazine and we felt that they were worth passing onto members who do not subscribe to Beebug. For those members, we take the opportunity to recommend Beebug to them as a magazine of consistently high quality and representing good value for money.

The text-indexing command (TI) will accept negative values, giving a piece of text jutting out from the main body of text.

✉ This character was sent directly to an Epson FX printer (from Wordwise) with the codes: 0C27,75,8,0,198,170,108,40,16,40,68,130.
The control codes 0C27,75,9,0,112,243,231,255,255,255,231,243,112 produce the following character. ☺

Tape to Disc Transfers - Part 2

Simple one part programs in either Basic or machine code, as described last month, can always be transferred to disc provided that they have not been deliberately protected. Most commercial programs consist of two or more parts which are chained together in some way and there is no single method for transferring these. There are however some general guidelines which can be given.

The simplest type is where a Basic program is followed by a machine code section and the two are loaded as one file. The filing system loads in a named file in its entirety before Basic checks for a valid program and provided that the first part of the file is a complete Basic program, the remainder of the file can be in any form. Program Power's "chess" and "rq-forth" are examples of this technique.

The problem is that when the program is SAVED onto disc only the Basic part is stored. This can be spotted by comparing the length of the file when it was LOADED and again when it was SAVED. The lengths should be identical for a simple Basic program. The solution is to *SAVE the program with a start address of &1900 (if using a computer with a disc interface fitted) and an execution address of &8023 using the full length. If, as a further complication, the program has to be downloaded to &E00 then a modified version of the method described for machine code can be used. A small extra file is created which contains:

```

10 *KEY 0 *LOAD prog 1100\&TAPE\&FOR I%=0 TO 1111:I%=&E00=I%&1100
      :NEXT\&MPAGE=&E00\&MOLD\&MRUN\&
20 *FX138,0,128
30 END

```

It is important to remember that the Basic program should not be changed in any way or the machine code section may be corrupted. Notice the use of OLD in line 10 above. This is to reset the Basic pointers TOP and LOMEM which are changed in the relocation.

A far more common format, especially with games programs, is to combine the above method with a further machine code program. Most of the early Acornsoft programs used this method. The first file to load contains a Basic program which sets up the envelopes and the user defined characters, followed by 1K of data to produce the familiar logo which is then up-loaded directly into screen memory (&7C00 for mode 7). The last line of this program then *RUNs the main machine code program.

There are several ways to handle this situation, all of which involve loading the main machine code program at &1900 for example and then down-loading to &E00. Of course the first program itself cannot contain the down-loader as it would be overwritten and corrupted by the second part before it had finished, and again it is easier to use another small program to carry this out.

You will need to know the load and execution addresses of the second part by using *DPT1,2 to load it. When transferring this part to disc, remember to *LOAD prog2 1900 from tape and then *SAVE 1900+length to disc. The procedure then is to load the first part (prog1) and change the line which says *RUN prog2 to PAGE=&7000:CHAIN"prog3". This puts the downloader in a safe position which will only be used for the screen when the main program is running. Save this part on disc with *SAVE prog1 1900+length 8023. Prog3 must then be created to contain:

```

10 *LOAD prog2 1900
20 For I%=0 To 1111 STEP 4:I%=&E00=I%&1900:NEXT
30 CALL &eeee

```

where 1111 and eeee are the load and execution addresses of prog2. Prog1 may now be CHAINED in the usual way and the program should run as usual.